THURSDAY, MAY 8, 1902.

STONEHENGE.

The Wiltshire Archaeological and Natural History Magazine. Stonehenge and its Barrows. By William Long, M.A, F.S.A. Pp. 244; many illustrations. (1876.) Price 7*s.* 6*d.*

The Wiltshire Archaeological and Natural History Magazine. Stonehenge Bibliography Number. By W. Jerome Harrison. Pp. 170 (1902.) Price 5*s.* 6*d.*

THE Wiltshire Archæological and Natural History Society is to be warmly congratulated on its persistent and admirable efforts to do all in its power to enable the whole nation to learn about the venerable monuments of antiquity which it has practically taken under its scientific charge.

Chief among these, of course, is Stonehenge, and it is fortunate for students that while interest in this structure, unique in so many particulars, is being revived, such a rich mine of information as that supplied by the Wiltshire Society should be available.

It is within the knowledge of all interested in archæology that not long ago Sir Edmund Antrobus, the owner of Stonehenge, at the request of this famous local society, the Society for the Protection of Ancient Buildings and the Society of Antiquaries, enclosed the monument in order to preserve it from further wanton destruction, and with the skilled assistance of Messrs. Carruthers and Detmar Blow set upright the most important menhir, which threatened to fall or else break off at one of the cracks.

Ever since that time he has been the butt of agitations in the local parish councils, got up apparently by persons who care, not for the preservation of ancient monuments, but rather that there shall be no right of property in anything interesting enough to be worth chipping.

The "unclimbable wire fence" recommended by the societies in question, the Bishop of Bristol being the president of the Wiltshire Society at the time, is by them regarded as a suggestion that the property is not national, the fact being that the nation has not bought the property and that it has been private property for centuries.

It is curious to think that the very destruction of the monument is now urged as an argument against enclosure. The *Times* in a recent article tells us some of the arguments used before a Committee of the County Council.

> "There are old ways, long and systematically used, which lead directly to the stone circles, and the barbed wire stretches right across these ways. One fact alone is sufficient to prove their antiquity. The outermost circle of Stonehenge consists of an earth vallum worn down by time and weather, but still rising some feet above the natural surface of the ground. The ways in question cut through this vallum, which rises abruptly some three feet or so on either side of them."

Everybody except the devastators knows that this vallum is the equivalent of the temenos walls which surround the Egyptian temples, and is part and parcel of the temple.

It is very sad to read, both in Mr. Long's volume and the bibliography, of the devastation which has been allowed to go on for so many years and of the various forms it has taken. It appears that this temenos wall or vallum was the first to suffer by indiscriminate driving over it, so that its original importance has now become so obliterated that many do not notice it as part of the structure; and that it bears the same relation to the interior stone circle as the nave of St. Paul's does to the Lady Chapel.

It appears also, from the *Times* account of the meeting, that a recent paper by Mr. Penrose and myself on the orientation of Stonehenge may have added strength to one of the arguments so improperly employed and apparently endorsed by Mr. Shaw Lefevre and others :—

> "One fact of singular interest was elicited. There seems to have been a special gathering every year, numbering thousands of persons, at Stonehenge to witness the rising of the sun on the 21st of June. As Stonehenge, according to the best opinions, was originally constructed with reference to rites performed at this very moment, there is nothing extravagant in the supposition that there has been something in the nature of a public assembly on Salisbury Plain at midsummer ever since the circles of Stonehenge were first completed."

Meanwhile we trust the Wiltshire Society will continue its labours, which date back at least to 1866, for the preservation of the monument, and that the members of the various Councils concerned will read the literature the Society has printed and become less philistine in their attitude. If Stonehenge had been built in Italy or France or Germany, it would have been in charge of the State long ago. Let the County Council send a small committee to Carnac to see how the equivalent monuments are looked after there.

It is very sad that in this twentieth century there should be Englishmen philistine enough to wish to preserve a so-called "right of way" which cuts through the vallum twice and passes close by the most important and imposing stone circle in the world. It is still sadder that since Sir Edmund Antrobus, the present owner, has accepted the advice of the Societies I have named to enclose the monument, with a view to guard it from destruction and desecration, he has been assailed on all sides, as we have seen. The world of science has already one matter of the highest importance to thank him for, namely, the setting upright of the so-called leaning stone, which was tottering to its fall. Let us hope that before long the minor gaps in the vallum may also be filled up. When they are, the present upholders of the "right of way" through the major ones will be the first to insist that the road shall be deviated outside one of the most imposing monuments of the world. In the meantime, it is comforting to know that, thanks to what Sir Edmund Antrobus has done, no more stones will be stolen, or broken by sledge-hammers; that fires; that unskilled excavations such as were apparently the prime cause of the disastrous fall of one of the majestic trilithons in 1797; that litter, broken bottles and the like with which too many British sightseers mark their progress, besides much indecent desecration, are things of the past.

Let me now refer more particularly to the publications of the Wiltshire Society bearing on Stonehenge.

Dealing with Mr. Long's memoir first, it may be stated that it includes important extracts from notices of Stonehenge from the time of Henry of Huntingdon to Hoare (1812), and that all extant information was given touching on the questions by whom the stones were erected, whence they came and what was the object of the structure. The barrows on Salisbury Plain are next carefully described, and the information to be obtained from them discussed in a most masterly way. It is a very great pity that a book so full of facts of great interest along so many lines has no general index.

Many who have followed the recent work on the monuments will be glad to have beside them for ready reference so many extracts from the publications of those who have attempted to solve its mysteries in the past. Thus we learn (p. 44) that in 1771 Dr. John Smith, in a work entitled "Choir Gawr, the Grand Orrery of the Ancient Druids, called Stonehenge, Astronomically Explained, and proved to be a Temple for Observing the Motions of the Heavenly Bodies," wrote as follows:—

"From many and repeated visits I conceived it to be an astronomical temple; and from what I could recollect to have read of it, no author had as yet investigated its uses. Without an instrument or any assistance whatever, but White's 'Ephemeris,' I began my survey. I suspected the stone called *The Friar's Heel* to be the index that would disclose the uses of this structure; nor was I deceived. This stone stands in a right line with the centre of the temple, pointing to the north-east. I first drew a circle round the vallum of the ditch and divided it into 360 equal parts; and then a right line through the body of the temple to the Friar's Heel; at the intersection of these lines I reckoned the sun's greatest amplitude at the summer solstice, in this latitude, to be about 60 degrees, and fixed the eastern points accordingly. Pursuing this plan, I soon discovered the uses of all the detached stones, as well as those that formed the body of the temple."

With regard to this "Choir Gawr," translated Chorea Gigantum, Leland's opinion is quoted (p. 51) that we should read Choir vawr, the equivalent of which is Chorea nobilis or magna.

That the slaughter stone was once upright is rendered probable by a reference to Mr. Cunnington's digging in 1803 (p. 56). Mr. Long adds:—

"Mr. William Cunnington, F.G.S., informs the writer that if this stone *stood erect*, it must have entirely concealed the 'gnomon' from persons standing in front of the 'altar.' 'It would have been impossible,' he says, 'to see the sun rise over the "gnomon" from the exact centre of the building. It is nevertheless a fact that the gnomon *does* occupy this critical position, as to the sunrise at the solstice.'"

But as we now know that from the axis of the sarsen stones the sun did *not* rise over the "gnomon," that is the Friar's Heel, this reasoning is not conclusive.

Again, there is the question of the roof. In our paper communicated to the Royal Society, Mr. Penrose and myself gave reasons why the Naos, that is the space included in the horseshoe of trilithons, was covered. This suggestion, however, I now find is not new, the view having been held by no less an authority than Dr. Thurnham (p. 67), who apparently was led to it by the representations of the Scandinavian temples as covered and enclosed structures.

On pp. 71 *et sqq.* I find a very interesting extract from a paper by Mr. Cunnington on the "Geology of Stonehenge." He points out the origin of the sarsens according to Prestwich:—

"Among the *Lower Tertiaries* (the Eocene of Sir Charles Lyell), are certain sands and mottled clays, named by Mr. Prestwich the Woolwich and Reading beds, from their being largely developed at these places, and from these he proves the sarsens to have been derived; although they are seldom found *in situ*, owing to the destruction of the stratum to which they belonged. They are large *masses of sand concreted together* by a silicious cement, and when the looser portions of the stratum were washed away, the blocks of sandy rocks were left scattered over the surface of the ground.

"At Standen, near Hungerford, large masses of sarsen are found, consisting almost *entirely* of flints, formed into conglomerate with the sand. Flints are also common in some of the large stones forming the ancient temple of Avebury.

"The abundance of these remains, especially in some of the valleys of North Wilts, is very remarkable. Few persons who have not seen them can form an adequate idea of the extraordinary scene presented to the eye of the spectator, who standing on the brow of one of the hills near Clatford, sees stretching for miles before him, countless numbers of these enormous stones, occupying the middle of the valley, and winding like a mighty stream towards the south."

Mr. Cunnington displayed great acumen in dealing with the smaller stones not sarsens.

"The most important consideration connected with the smaller stones, and one which in its archæological bearing has been too much overlooked, is the fact of their having been brought from a great distance. I expressed an opinion on this subject in a lecture delivered at Devizes more than eighteen years ago, and I have been increasingly impressed with it since. I believe that these stones would not have been brought from such a distance to a spot where an abundance of building stones equally suitable in every respect already existed, unless some special or religious value had been attached to them. This goes far to prove that Stonehenge was *originally a temple*, and neither a *monument* raised to the memory of the dead, nor an astronomical calendar or almanac.

"It has been suggested that they were Danams, or the offerings of successive votaries. Would there in such case have been such uniformity of design or would they have been all alike of foreign materials? I would make one remark about the small impost of a trilithon of syenite, now lying prostrate within the circle. One writer has followed another in taking it for granted that there must have been a second, corresponding with it, on the opposite side. Of this there is neither proof nor record, not a trace of one having been seen by *any* person who has written on the subject. This small impost, not being of sarsen, but syenite, must have belonged to the original old circle; it may even have suggested to the builders of the present Stonehenge the idea of the large imposts and trilithons, with their tenons and mortices."

There are several references throughout Mr. Long's memoir to the tradition of the slaughter of Britons by the Saxons at Stonehenge, known as "The Treachery of the Long Knives"; according to some accounts, 460 British chieftains were killed while attending a banquet and conference. But one important item is omitted. I have gathered from Guest's "Mabinogion," vol. ii. p. 433, and Davies' "Mythology of the British Druids," p. 333, that the banquet took place on May eve "Meinvethydd."

There is ample astronomical evidence that arrangements were made for observing the sun on May day both before and after the erection of the sarsens, and I think by this the truth of the tradition is strengthened.

Of the more recently published volume dealing with the bibliography of Stonehenge it may be said that no reference to Stonehenge by any ancient author, or any letter to the *Times* for the last twenty years dealing with any question touching the monuments, seems to be omitted from the bibliography. Thus, to give an instance, I find my old friend Sir Arthur Helps' work on "Spain's Conquest of America" referred to because in vol. iii. he treated of sun worship in Peru. The bibliography is not only to be commended for its thoroughness, but for its admirable method; it is a model of what such a work should be, and has evidently been a labour of love: Mr. Harrison acknowledges his obligations to the Birmingham Free Reference Library and the Bodleian, as well as to the Society's library at Devizes.

NORMAN LOCKYER.

STUDIES IN THE DISTRIBUTION OF PLANTS.

Die Vegetation der Erde, Sammlung pflanzengeographischer Monographien. Herausgegeben von A. Engler und O. Drude. (Leipzig: Verlag von W. Engelmann.)

1. *Grundzüge der Pflanzenverbreitung auf d. iberische Halbinsel.* Von Moritz Willkomm. Mit 21 Textfiguren, 2 Helio und 2 Karten (1896.)
2. *Grundzüge d. Pflanzenverbreit. i. d. Karpathen.* Von F. Pax. Mit 9 Textfiguren, 3 Helio und 1 Karte (1898.)
3. *Grundzüge d. Pflanzenverbreit. i. d. Kaukasusländern, von der unteren Wolga ueb. d. Manytsch-Schneider, bis z. Scheitelfläche Hocharmeniens.* Von Dr. Gustav Radde. Mit 13 Textfiguren, 7 Helio und 3 Karten (1899.)
4. *Die Vegetationsverhältnisse d. Illyrischen Länder.* Von Dr. Günther ritter Beck v. Mannagetta. Mit 6 Vollbildern, 18 Textfiguren und 2 Karten (1901.)
5. *Die Heide Norddeutschlands.* Von P. Graebner. Mit einer Karte (1901.)

THE editors of the series of which the five volumes before us form the first instalment are to be congratulated no less on the courage with which they have embarked on a vast undertaking than on the success which has thus far attended their labours. The authors who have been severally entrusted with the floras of the different regions have been wisely selected, and are well qualified by special knowledge, extending in some cases over a considerable number of years, to grapple successfully with a task of no small difficulty and one which calls for the exercise of critical judgment of no mean order.

The general method of treatment is, in its broader outlines, tolerably uniform throughout the series, though of course there is considerable diversity in the treatment of details. A brief historical introduction in each case gives an account of the previous work done in a particular region, and this is followed by a discussion of the physical characters and climate of the latter, in so far as these affect the nature of the vegetation and the distribution of the plants within the area. The floras themselves, though often containing rather lengthy lists of plants, are designed, in the first place, to give the reader a general picture of the vegetation as a whole, and also to enable him to trace its relations with the physical environment. For this purpose they are broken up into groups, characterised by the predominance of some particular tribe or assemblage of plants, *e.g.* the oak flora, the Mediterranean, the alpine, &c. In some cases, too, the cultivated plants are sufficiently described to give a fair impression of the chief features of the more inhabited regions. Perhaps the most generally interesting part of each book is that which deals with the affinities of the flora with the plants of foreign countries, and also the ecological peculiarities that are illustrated within the area of the several regions themselves.

The flora of Spain is discussed by Dr. Willkomm. It is one which is full of interest, not only from the large number of endemic species which it includes, but also for the great variety of *facies* which it exhibits. These characters are clearly traced in connection with the isolation, in the first place, of the peninsula itself, and, secondly, in the remarkable diversity of physical conditions which prevail within it.

The Carpathian flora, discussed by Prof. Pax, is one of remarkably mixed origin, but its affinities can be traced pretty definitely to a European source, on the one hand, and an Asiatic one on the other. Several forms from Siberia find a place here, but the greater number come from Asia Minor and do not extend farther into Europe. There is, of course, a fairly strong affinity with the flora of the Alps, whilst a Pyrenean element is also met with. The flora is thus rather a synthetic one, although there are a few endemic forms. The latter are, however, related to others occurring in the regions above named. In dealing with the flora of the lower slopes, the author deplores the mischievous effects of an imperfect acquaintance with the principles of forestry upon the woodlands, many of which are apparently suffering severely from ignorant treatment.

The volume is one which will appeal strongly to anyone who is interested in the broader problems of distribution and ecology, and it is a solid as well as a suggestive contribution to scientific literature.

Prof. Radde, in dealing with the plants of the Caucasus, describes the vegetation of the steppes to the north of the range, and his frequent journeys into these regions enable him to give a very fair impression of the appearance of these lands at different seasons of the year. The character of the vegetation of the higher altitudes of the Caucasus differs greatly on the two slopes, as might have been expected from the general trend of the mountains themselves. On the southern slope there is a great predominance of Persian plants, as shown by the abundance of species of Astragalus, Acantholimon and others. The prevailing character of the flora is markedly xerophytic, and it should be one which would repay further biological investigation.

The author distinguishes five principal zones, viz. the